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THE PHYTOLOGIST.

A BOTANICAL JOURNAL.

Ὡς ἐμεγαλύνθη τὰ ἔργα σου, Κύριε!—πάντα ἐν σοφίᾳ ἐποίησας.

PSALM. *civ.* 24.

Benedicite universa germinantia in terra Domino; laudate et superexaltate EUM in secula.—*Hymn. iii Pueror. v.* 76.

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THE LONDON CATALOGUE OF BRITISH PLANTS,

Published under the Direction of the Botanical Society of London, adapted for marking Desiderata in Exchange of Specimens, etc.

WILLIAM PAMPLIN, 45, Frith Street, Soho Square.

THE OPENING YEAR.

"Sicker (surely), Willy, thou warnest well;
For winter's wrath begins to quell,
And pleasant spring appeareth;
The grass now gins (begins) to be refreshed,
The swallow peeps out of her nest,
And cloudy welkin cleareth."

It is difficult to convey to a person brought up in a large town, "to one who long in populous city pent," the effect which the varied aspects of Nature—for example, the arrival of migratory birds, the flowering of plants, the leafing of trees, and atmospheric variations—have on one who has been nursed in Nature's lap, or who has been born and educated in the country. The latter has an additional sense to which the former is a stranger. Reminiscences and associations link his own history with the surrounding objects of his notice, and the mysterious energies of Nature operate on his own being, and his feelings are an index to the seasonal changes of the year. When Nature wakes up from her winter's sleep and is shining in earth and sky, her activities are felt within, and, without any other monitor to warn him of the lapse of time, his inward perceptions tell him that the season of flowers is come—he seems to hear a voice wooing him to the fields. In autumn, too, when Nature's grand operations are almost over, and she is, in some of her departments, already undressing herself before retiring to rest—the pale light thrown over the landscape, and the solemn stillness which almost universally reigns, exert an influence upon his mind widely different from that buoyancy of spirit produced by the advent of spring.

But there are more obvious phenomena accompanying the opening year, and which can be recognized by the senses. We might draw many illustrations from the feathered tribes and the insect world, but shall confine ourselves to the mention of a few, drawn principally from the vegetable creation.

First comes the *Snowdrop*, emblem of modesty and innocence. While Winter yet scowls, or his angry voice is heard in the north, commanding silence from almost every feathered songster, and Desolation still holds his sway, it comes, though with drooping head, like a friend in adversity, to cheer our drooping spirits, by telling us of verdant meads and sunny skies that are soon to follow.

BRITISH MUSEUM

It was in the days of our childhood, and at a season when winter was still howling in storms, that we were first captivated by the "shame-faced maidens," with their modest faces partly hidden under a veil of snow. Pressed down by a burden their fragile stems are ill able to bear, they look cheerless under such circumstances, it is true, but they whisper hope; and the *Crocus* comes next, announcing the joyous season that approaches.

Even at this early season of the year, the missel-thrush is seated on yonder tall elm, as if on purpose to sound out, in loud, wild, flute-like notes, the welcome intelligence that Spring is coming: but, when the sky has relented and the clods are beginning to dry, a walk into the fields and woodlands becomes deeply interesting.

The *Adoxa Moschatellina* is another of the harbingers of spring,* and though *without glory*, as its name imports, is a pet flower with the ladies. We shall not soon forget the look of complacency and chastened pleasure with which it was once handed to us by a young Quaker lady, who in her first walk in the opening year had been so fortunate as to find it. This flower seems to shrink from the gaze of the vulgar, and is not often found, except by the prying botanist. We have often been asked to describe it, by those who are fond of wild flowers, yet had never seen it; and we have been in the habit of saying, "Look low down in the hedge-bank for a little green flower, or rather an assemblage of five flowers,—one flower looking east, another west, another north, and another south, with one at the top, looking up to the sky—and you have the *Adoxa*." Of course, all that is meant is, that each succeeding flower is at right angles to the one preceding it; so that, if one indicates a point of the compass, all the others must, except that one at the top. This flower, though so unobtrusive, has not wholly escaped the notice of artists, for we have seen it modelled on a picture-frame, where it has a very pretty effect, as both leaves and flowers are very graceful and admit of grouping in so many different ways.

The *Hazel* now tempts the feet of many a child to the margin of the wood, to gather its pendent catkins; and we are not ashamed to own that, as often as the season comes round, we are in the habit of directing young minds to such sources of plea-

* We have gathered it in Yorkshire as early as January 27th, and with the flowers fully expanded.

sure, and of joining the little exploring party in their search after those objects of natural history that accompany the opening year. These "lessons on objects" we have always found to be far more interesting to children than anything that can be told *about* them; for they are never tired of *seeing*, though they may not be fond of sermonizing; and, when the microscope is taken out of its case, there is sure to be a rush made to get the first peep at the tiny wonders thus revealed.

We often smile at the simplicity which characterized us in the days of our childhood, when the schoolmistress used to tell us, with so much apparent gravity and earnestness, that "as soon as the ducks had eat all the dirt up," all who were big enough to walk so far should go with her down to Drew's Pond, a distance of little more than a mile, to gather *pussy-cats* (catkins of the hazel) and violets. We seem to see, even now, the yellow pollen of the catkins on the noses of our little schoolmates, and cannot forget how, before we saw the violets, our senses were regaled by their fragrance, which was exhaled from a mossy bank. The two plants have always been favourites since; but we were not taught to look a little lower down on the sprays of the hazel for the beautiful crimson styles of the female flower.

As the season advances the light clouds hover about; there is also a softness and transparency in the air; the buds are opening and emitting their peculiar odours, which are very perceptible after a shower; the cottager is out trimming his garden, and star-like primroses are seen. Oh, what recollections are awakened by the mention of this flower! We remember how we used to assemble outside the school, to appoint a place of meeting for one o'clock, from which we would run, rampant with joy, down to Rundas Water, and bound over the rivulets to gather primroses, which we intermixed with blue-bells and stuck round our hats on our return. These were sunny days, and the recollection of them is dear to us still; and the flowers have become endeared to us by a thousand associations connected with the scenery where they grew.

A little later in the season, and the *Gandigosling* (*Orchis mascula*) comes into flower; and we remember, as if it were but yesterday, with what exuberant joy we listened to the welcome announcement made by the good old dame already mentioned, that on the morrow, if we were good, we should go out walking with

her, to get Cuckoo-flowers and Gandigoslings. We often regret that we filled so many pinafores with the latter flower, which abounded in the neighbourhood of Devizes; for drainage and the improvement of the land, we believe, have made it far less plentiful than it was then. Many years ago, when we had removed into the north, we got a friend to send us two or three specimens of this much-loved flower, as the first spring had passed without our meeting with it and we feared it was not found in this neighbourhood, which happily proved to be a great mistake.

We could say much on such a theme as this; but, fearing to be too prolix, we will leave it for the present, and perhaps take another view of the matter on some fitting occasion.

RUBICOLA.

POTAMOGETON CRISPUS.

Hybernaculum of Potamogeton crispus; *by* TREVIRANUS. *Translated from the "Botanische Zeitung," No.* 41. *October* 9, 1857.

It is well known that the delicate structure of water-plants renders many of them unfit to withstand, for any length of time, the destructive effects of the element in which they live; and their seeds, therefore, do not always come under the conditions necessary for ripening them. But their reproductive power has been preserved by means of gems (hybernacula, Linn.) in a manner that offers several peculiarities. In the third volume of the Transactions of the Botanical Society of France for 1856 (p. 350), Clos describes a particular mode of propagation of *Potamogeton crispus*. On the 16th January he remarked, among a mass of *Vallisneria*, some brownish-coloured bodies of a horny consistency, formed of four, five, or six leaves, sessile, on an axis of three to five centimètres in length. They were kidney or heart-shaped, toothed, sharp-pointed and placed horizontally. From the axil of one of them sprang a stem, which had thrown out, from its rather distant knots, rootlets and leaves, proving it to be *Potamogeton crispus*. About the middle of June, Clos made the following observations on the origin of these bodies.

From the axil of the upper leaves, of the flowering as well as of the barren stems, springs a short branch, not exceeding four to six centimètres, the axis of which is of a horny texture. Its lower leaves are of the usual consistency, but the following have a hardened broad base, toothed at the edge (which forms a sort of sheath for the undeveloped bud), and a strap-shaped fleshy tip, the two parts separated from each other by a notch (or joint?) as in *Dionæa muscipula*. These little branches, each of which bears a bud in its axil, separate very readily from the parent stem, and fall to the bottom of the water, where they acquire a brown colour and horny consistency, but do not undergo any further change till the following January, when one of these axillary buds is developed into a runner. This becomes a rhizome and brings forth branches.

HYBERNACULUM OF POTAMOGETON CRISPUS.

a. Axis and horny leaves of the hybernaculum of *Potamogeton crispus*. *b*. Undeveloped bud. *c*. A vertical section of *a*, showing three axillary buds.

I am able fully to confirm these interesting observations. As far back as the 18th of November, in the warm autumn of 1818, I noticed on the edge of a half-dried pond an immense

quantity of shoots of the weed in question, springing from a thick body buried in the sand. This proved to be a cylindrical stem, round which were four to six sessile, round, leathery scales, with a toothed base and lengthened point. From the short spaces between these scales, sometimes from the axil of one of them, grew a young stem with leaves and rootlets, but only one, the buds visible in the axils of the other scales remaining undeveloped.

The accompanying drawing, which I made at the time, gives a tolerably correct representation of it.

IN MEMORIAM.

In Memory of the late William Borrer, Esq., F.R.S., F.L.S., of Henfield.

"Can flattery soothe the dull cold ear of death?"

The brief obituary on the 64th page of the present volume tells us, in plain terms, that there is no dallying with death; to the reflective reader it will bear the same message that the prophet delivered to the king, viz. "Set your house in order," for no one can say who may be the next victim.

> "Death's shafts fly thick. . . .
> On this side and on that men see their friends
> Drop off like leaves in autumn.
> Oh, slippery state of things!"

While it is just and becoming, to acknowledge our individual and personal obligations to him who has recently departed, and to sympathize with his relatives who have suffered this bereavement, and to condole with his numerous surviving friends, so far as is tolerated by the usages of society, our main object will be to exhibit, in these short and simple records of a good man's life, a subject not for the admiration but rather for the imitation of his contemporaries and posterity.

The lovers of nature, or, as they may be more correctly called, the admirers of the visible creation, who contemplate and enjoy the manifold works of the Creator, and who in the broad page of this book of knowledge learn the power, wisdom, and goodness of the almighty hand which made them, have no immunity from

the lot common to all mankind. The most zealous and most successful partisans of Botany must submit to that destiny which, like time, devours all its offspring. As "the flowers of the field, they fade, die, and disappear." Botanists however rarely figure in obituaries before attaining a mature age.

But the memory of the just is imperishable, for "the righteous shall be in everlasting remembrance." Their memorial is written among the eternal records—in that dread book, which will be opened when all the dead, both small and great, stand before God to be judged and rewarded according to their works.

That all our literary and scientific offences and shortcomings, our social, moral and religious delinquencies, may be blotted out of that awful record, is our earnest prayer for ourselves and for all our fellow-sinners.

Botanists are not exempted from the numerous ills which "flesh is heir to;" but most of the fraternity are better fitted, by their attachment to the out-of-door exercise of their innocent pursuits, to bear some, at least, of the evils incident to humanity with rather more equanimity and cheerfulness than those can who are enervated by torpidity of mind and body, indolent habits, and all other seductive indulgences which hinder people from leading useful, healthy and happy lives.

The votaries of Flora are not much tormented with the spleen, the megrims, and other sullen vapours which becloud the brain and enchain the spirit. They inhale the invigorating breezes of the hills, the freshness of the fields teeming with vegetation, enjoy the ever-changing aspects of nature, and admire the variety, the beauty and the utility of every object which the ground spontaneously brings forth for the blessing and gratification of mankind. In the shady wood or forest, in the sequestered vale, on the mountain side, among rocks, by rivers, lakes, and the sea-shore, they converse with nature and with themselves—

> "Enjoy the cool, the fragrant, and the silent hour,
> To meditation due and sacred song."

It is always to be admitted, as a matter of course, that the great secret of living happily is "to keep a conscience void of offence both towards God and towards man;" but, as subordinate conditions of happiness, the preservation of a sound mind in a healthy body (*mens sana in corpore sano*) is not one of the least

important duties of reasonable beings—to preserve the health of the body and the peace and cheerfulness of the mind by temperance and exercise. If the amusements and operations of botanists be less exciting and not so brilliant as those of some people, their lives are healthier and happier than most.

But whatever be the cause of this more enviable condition, it is a fact that botanists for the most part die in a good old age and generally leave behind them, as a legacy to posterity, an honest report, a respectable reputation, "a good name better than precious ointment." This is the true "odour of sanctity" which, in primitive times was believed to emanate from the bodies of the recently-departed saints.

It would have been most satisfactory to have had a sketch of the deceased's character from some of his relatives or from some one of his numerous friends who had long enjoyed his friendship and who were intimately acquainted with his habits, his intellectual predilections, his moral sympathies, and his religious opinions, his faith and his hopes. On these topics the writer of what follows has no information to give, the following commemorative token is offered as an act of duty to our readers, most of whom knew Mr. Borrer, and as a small tribute of affection and piety which is due to the memory of one of the oldest and most estimable of our scientific correspondents.

The readers need not expect a genealogy of the late gentleman, a subject unknown to us; and if it were, there is no room for it in these pages. For equally good reasons, all anecdotes of Mr. Borrer's childhood, of his education and the part he performed in the great battle or drama of life, must be passed over in solemn silence.

The readers of this sincere though humble memorial were familiar with the name of Mr. Borrer as an amateur botanist, as a contributor to the 'Phytologist,' as a liberal donor of specimens, and as a reliable authority for the genuineness of many assigned localities of plants, and as a good judge of their claims to rank as native productions.

Some time must elapse ere any other equally influential botanist, who is able to devote his time and labour to the investigation of local botany, will be found to take his place; for our late friend had much experience, was singularly well qualified by his long habits of observation and by his clear judgment, for being an

impartial umpire on all such questions. He was also by nature truthfully disposed, and by long practice he was trained to nicety of description and accuracy of detail. It will be "long ere we look on his like again," as a trustworthy painstaking historian of what he had observed in the numerous journeys he undertook in the pursuit of his favourite science.

One of the most amiable traits in this part of our late friend's character was his affability and condescension to all who solicited his help. His botanical creed and practice were founded on the most cosmopolitan, catholic, and comprehensive principles. Nobody, whatever might be his social status or acquirements, applied in vain to Mr. Borrer. Every one who had or professed to have a knowledge or only a simple love of the science of which he was not only a promoter but an ornament, found in him a willing listener and a zealous and efficient instructor or informant. Everybody who carried a vasculum was welcome at Henfield. The botanist needed no introduction; science, like freemasonry, can dispense with the usual conventionalities, which are necessary to prevent our treading on the kibes of one another, but are sometimes troublesome impediments, disturbing or checking the social intercourse of those engaged in kindred pursuits. They were no hindrance to the freedom and frequency of intercourse of communication with Mr. Borrer.

Mr. Borrer's knowledge of British plants was extensive and accurate, and, consequently, among the few botanists who still devote their attention exclusively to our native species his authority was supreme; but his merits were acknowledged by some whose studies are not restricted within so narrow limits as the four seas which bound the British Isles.

The eminent director of the Royal Botanic Gardens, Kew, Sir W. J. Hooker, surely no mean judge, places him at the head "of the most able botanists of our country." (See Preface to the third edition of the 'British Flora,' p. x.) He further informs his readers in the same preface that "the first of these gentlemen (Mr. Borrer) has kindly undertaken a complete revision of the genera *Myosotis*, *Rosa*, and *Rubus*."

This eminent author, in many parts of his 'British Flora,' and especially in the first part of the second volume, that on *Musci*, *Lichenes*, *Algæ*, etc., bears ample testimony to Mr. Borrer's celebrity as an acute observer and as a successful discoverer.

The renowned Lichenologist, Acharius, has styled the subject of these memoranda "*Lichenologus eximius*," which means that his acquaintance with Lichens was profound.

His name is honourably preserved in several species and in one genus of plants. *Borrera* is a genus of Lichens which will transmit Mr. Borrer's name to succeeding generations of lichenologists; also several species of Algals, Lichens, and vascular plants bear honourable testimony to his knowledge of these obscure objects, and testify by their names to his success in discovering and distinguishing species: for example, *Sclerochloa Borreri, Luzula Borreri, Parmelia Borreri, Meloseira Borreri, Calthamnion Borreri*, etc.

These testimonials from the greatest botanists of this or of any preceding age—these ample honorary rewards ungrudgingly paid to an amateur, to a gentleman who did not make botany the sole or chief employment of his life, but who only cultivated it as a relaxation from business, or as the amusement of his leisure time—must be received as satisfactory proofs of his botanical merits.*

It is hoped that our readers will not be inquisitive about how his time was spent when he was not engaged on botanical studies, for on this subject their humble servant, the writer, cannot afford them the slightest information; but he can tell them instead several truths that are far more important and interesting, not merely to the lovers of British plants, but to the students of the science in general.

The present generation of British botanists are more indebted to Mr. Borrer than to any one of the last or the present century for precise information about the distribution or localities and the distinctions of British plants. His labours on these subjects, if not more striking, are surely as meritorious and of as much utility to the students of our native vegetation as the discovery of new plants—a species of good luck which is of more importance to the discoverer himself than to science or to its cultivators.

But of this fortuitous kind of merit Mr. Borrer has his full share, at least as much or more even than usually falls to the lot of botanists living in a country so long and pryingly searched as England has been.

* To a very few botanists the subject of this sketch is known as one of the authors of 'Lichenographia Britannica,' a history of British Lichens, printed by C. Sloman, Yarmouth, 1839, 8vo. This work, which was never published, was the joint production of Dawson Turner and William Borrer.

It was his well-known reputation for trustworthiness, for accuracy, fidelity, comprehensive views, and the like, that rendered his judgment on the questions of nativity, spontaneous growth, etc., so peculiarly valuable. It is well known that he personally visited every locality where unheard-of plants were to be seen, or had been reported as seen. He spared no expense, and underwent much toil, in order to ascertain the truth of whatsoever was reported on this subject.

For many years his exertions were incessant to ascertain by personal observation what truth there was in any reported new acquisition; and he underwent much toil to verify old and long-known stations for rare plants. There were few interesting botanical localities in England, Ireland, Scotland, and Wales which he had not at some time or other, in the course of his long and active life, personally visited. In proof of this, the pages of 'Sowerby's English Botany,' and especially those of the supplementary volumes, also the excellent 'British Botany' of his friend Sir W. J. Hooker, may be cited as ample evidence that he spared no labour and endured much fatigue in his many botanical excursions in pursuit of these objects.

In order to the identification or the distinction of species, he cultivated probably more British species than were ever previously brought within the boundaries of a garden, with the exception of the late Mr. Forster's collection. Here, in the country, at Henfield, under his own eye and at his leisure, he grew the doubtful or critical species side by side, that he might be the better qualified to decide about either their distinctness or their identity.

One of the most amiable traits in this humble man's character was his readiness and zeal in aiding authors of established reputation. He was more solicitous to assist others than ambitious himself of enjoying the honours of authorship. Of fame he appears to have been more singularly negligent than most men, but few appear to have enjoyed in a greater measure than he did the luxury of doing good. His liberality, his carefulness in describing, the truth-loving character of all his communications, are notorious to those who had the honour and privilege of corresponding with him on scientific subjects.

Science might still profit, and our contemporaries and posterity might still gain something from the labours of our lamented

friend, especially if there exist any notes or remarks on the results of his experience derived from the cultivation of *quasi*-species side by side in his large collection. His extensive knowledge of plants and his appreciation of forms, as distinguishing species, might still be available in promoting that sound critical acquaintance with the science which he laboured to improve, if any memoranda exist which might be published for the instruction of the less informed and inexperienced.

During his long and busy life he delighted in imparting instruction to all who would receive it. His notice and encouragement were generously granted to all who availed themselves of his aid, or appreciated the information he had to give, or who had a fellow-feeling with him in his admiration of the good, the beautiful, and the useful, as manifested in plants, to all whose pursuits and tastes were congenial to his own. To such he was always accessible, whatever might be the grade of the applicant; no introductions or recommendations were necessary to procure admission to view Mr. Borrer's extensive collection of living plants, or to inspect his Herbarium, or to consult his library.

The catholicity of science was never more prominently and practically exemplified than it was by Mr. Borrer, who honoured with his notice and patronage and encouraged with his favour every attempt to get or to spread knowledge, however humble the applicant, and however feeble the attempt.

To the 'Phytologist' he was always a steady friend, a valued contributor, and a staunch supporter, from its commencement up to the latest period of his life; and, as long as health and strength permitted, he took a deep interest in its management and success.

He recently made the following remark in addressing an eminent botanical friend: "When my periodicals arrive, I always look first at the 'Phytologist.'"

In giving publicity to Mr. Borrer's merits as a scientific man, we are performing a duty incumbent on us by the accident of our public connection with science; in recording our love and admiration of his character as a man of singular gentleness and humility, we are doing an act very gratifying to our own feelings.

The character of our late correspondent has far higher claims to our veneration than that he was distinguished by tastes, pursuits, and studies congenial to our own feelings and disposition;

it is as a Christian gentleman that we cherish his memory. The former features are amiable and praiseworthy, they ornament and embellish life, they contribute to the enjoyment of the possessor, and like other means augment his opportunities of extending his influence and of doing good. Mr. Borrer was a philanthropist in the best and widest sense of this sometimes prostituted term.

His benevolence was not confined to the inmates of his own neighbourhood, but was nearly as wide as the world or as extensive as destitution and misery.

During the life of his very intimate friend Mr. Edward Foster, who acted as the dispenser of his bounties to metropolitan charities, his subscription list was intrusted to this gentleman; and from this and other memoranda it appears that the Orphan Institution, the Destitute, the Idiot, and similar societies, were aided by his purse and influence.

The sterling goodness of our deceased friend's character is not to be inferred alone from what has been above stated about his trustworthiness as an observer and his faithfulness as a narrator of what he observed, nor from his disinterested journeys in pursuit of truth, nor from his liberality as a man of wealth who ever evinced greater delight in helping others than in enlarging his own fame. These are all most amiable traits of a character which every friend of humanity takes pleasure in admiring and describing. His efforts in the cause of God and of eternal realities are imperishable, being recorded in Heaven's chancery; his personal labours to prepare the youthful members of his humble neighbours for a higher station than wealth, influence, and science can confer, is that feature of his character which will be valued as the impress of divinity, as the fruit of the spiritual life which is enjoyed and manifested by every true believer in the doctrines of Christianity—by all who are themselves convinced that they are candidates for the kingdom of God, and who consider the present condition of humanity merely as the state of preparation for a more permanent and glorious existence.

We are solely indebted to a friend for much of what has been already advanced, and, it may be said, for all the following statements.

The writer of this brief sketch of a good man's scientific, benevolent, and liberal actions, knew Mr. Borrer only as a botanist

and a friendly correspondent on botanical subjects. But he knew him many years before the period when the 'Phytologist' dates its commencement, consequently he is competent to bear a faithful testimony to the integrity, kindness, and liberality of one whom he long knew by report and with whom he occasionally corresponded; he is indebted to another hand for what he has now the pleasing task of recording. Our friend writes as follows:—

"But it was not by purse and by proxy alone that Mr. Borrer lent his influence and his aid to the cause of God and of Christian truth; he laboured to advance both by more active exertions. His personal services, his individual energies were devoted to the spiritual as well as to the temporal relief of the necessitous. He laboured to prepare subjects for the kingdom of heaven.

"In his own house he assembled, on Sunday evenings, the children of his neighbours, who were taught such doctrines and duties as come legitimately within the scope of instruction proper for the Lord's Day.

"Here he himself taught one of the classes, and, to the members thereof he might be seen, and heard too, imparting such instruction as befits those to receive, who are members of the Body of Christ and inheritors of everlasting life."

"This work and labour of love which he cheerfully performed, adds the correspondent above quoted, "is an unmistakable evidence that he was 'ready to every good work;' and now he rests from his labours and his works do follow him."

To the justice and truth of this remark we believe that every one of our readers will heartily respond, and utter the fervent prayer that they may, like "the righteous," be had "in continual remembrance," and that their last end may be peace. Our friend concludes with the remark that "his loss will be long felt and, by not a few, much lamented; and that our botanists (we leave out the sons and daughters of affliction—God will raise up another helper for them) at present do not know where to look for an equally able, equally willing and influential promoter and friend of science to fill up the gap left in our ranks by his decease."

The preceding brief and imperfect sketch is but a humble though sincere tribute to the memory of a gentleman who was universally either esteemed or loved. The writer does not pretend to have had many opportunities of knowing and appreciating

the amiability of the character which he has done his best to describe, for he never had much personal intercourse with the deceased, and he never had any pretensions whatever to the enjoyment of his intimacy or friendship. Therefore what has been advanced may be unhesitatingly received as the belief of one who is neither biassed by interest nor by social friendly tendencies. The writer, as above stated, would rather that this duty had devolved upon some one who was more intimate with the deceased than he, and consequently better qualified to do justice to his memory; but, as no one has come forward to supply the readers of a periodical held in high estimation by the departed with a brief sketch of one of its most distinguished supporters, it was incumbent on him to perform the task himself according to his ability.

It should also be stated that this is composed for the readers of the 'Phytologist,' and exclusively for them. Most of the contributors knew their late co-contributor personally, and all of them know the high rank he held in the estimation of British and foreign botanists. None of them, we are confident, will deem this simple sketch a too highly-coloured panegyric of our lamented friend. It is a plain honest statement of facts, notorious to all who are conversant with the literature of botany during the past forty years.

No more needs be stated about the scientific eminence and the liberality and personal sacrifices of Mr. Borrer. These facts are on record, they are attested by testimony which will not be disputed, and they are well known to many of our readers. We rely on the fidelity of our correspondent for the truth of our statements about his benevolence, his charity, his personal exertions to ameliorate humanity, and to raise up the fallen, to relieve the distressed, to reform the bad, and to prepare the younger members of society for another life.

We are far from stating or believing that the efforts of our late friend in improving mankind, relieving destitution under its many forms, in mending the morals of his neighbours, and in imparting religious truth, are in the present day singular and isolated facts. We know and are thankful that there are many who delight in doing equally praiseworthy deeds. Therefore we take courage, and we pray that their number may be increased a hundredfold.

We have the greatest pleasure in bearing this testimony, imperfect though it be, to the character of the deceased, because there are in this age, which calls itself an enlightened one, persons of some influence in the world who both think and say that science is hostile to religion. This notion has its foundation in the freedom which some writers have indulged in their disquisitions on certain astronomic and geological facts which appear to contradict sacred history. It is quite a mistake. The deeper the knowledge of physical truth, the more profound will be the apprehension of divine realities. That there have been scientific unbelievers in revelation is not denied. The subject of this sketch was not one of them.

Again, if it be said that a panegyrical propensity has been indulged, the soft impeachment may be admitted without mantling the cheek with the faintest tinge of crimson. We never heard anything but good of him who is now no more and whose loss we all lament, and we deferentially ask our readers to study the prominent points of his character and to imitate his example. The writer will not deny that it was his purpose to compose this memorial in a laudatory strain. If he had done it otherwise, he would have been unfaithful to his own convictions and feelings, and could have expected no sympathetic echo from the hearts of his readers.

"The evil which men do lives after them, while the good which they do too often perishes with their lives." We have done our best that the reputaton of our friend's good deeds shall not perish. Though but a feeble effort to perpetuate the memory of departed worth, it is sincere. It is not as a mere memorial tribute, however willingly offered, that it is composed, but with the further view, the charitable intention, of stimulating our contemporaries and posterity to imitate so good an example.

Our departed friend worked well and wisely in the cause of science, humanity, charity, and religion; and those who survive are encouraged to imitate him and to labour that they may leave the world better than it was when their career commenced, by enlightening the ignorant, stimulating the conscience by diligence "in season and out of season," by reproof, encouragement, and consolation in imitation of HIM who will reward every one according to his works.

Heroic, strange, and striking events are rarely to be met

with in the records of a good man's life. Heroism has its proper place in the history of mankind, but not in the simple annals of botany. Hero-worship is no part of the belief or the practice of botanists. Their simple innocent labours and their peaceful though useful lives require no trophies reared to transmit their memories to posterity. Yet their memorials, though only a tree, a shrub, or an herb, or even a shorter-lived object, are permanent, perennial, evergreen, and everywhere present. The antiquity and the durability of their monuments far exceed those of the ancient Egyptian kings, the Pharaohs, Cheops, and Sesostris, who are commemorated by the famous Pyramids; they have existed since the Creation, and, for anything we know to the contrary, they may form an ornamental and useful part of the earth when it is renovated and has again become the abode of justice, peace, and blessedness. They will exist after the proudest structures have crumbled into dust, and their names and their very sites have disappeared from the memory of man and from the face of the earth.

Where are *now* the ancient cities of Babylon, Nineveh, Memphis, Tyre, etc.? Where is ancient Troy, claimed by the poet? The very sites of most of these monuments of greatness, tyranny, and oppression are unknown. On the other hand, the *Linnæa*, the *Borrēra*, the *Woodsia*, the *Lonicera* and *Lavatera*, commemorative genera of shrubby or herbaceous plants, have existed since the Creation, and will exist to the end of time; when statues, pillars, and monumental towers and palaces have become as the baseless vision, and leave not a trace of their former magnificence and beauty. The Pæonies, the Parsley, the Lobelias, and the Stocks will be as attractive for their grace, their forms, their colours, and their smell, as when they were first scattered over the earth from the bountiful Creator's hand.

It is idle to expect that the world will ever go a-wondering after simplers. Although there be more marvels concealed in the cup of a flower, and in the pouch or pod which contains the seed, than in the most ingenious and complex human invention, few will condescend to look into either. Wisdom speaks to people from the stars, and from the deep recesses of the earth, and from the humble floweret that grows and blushes unseen in the lovely vale. How many listen to her, or learn the lesson she is qualified to teach?

It is true that the sciences of astronomy, geology, and even the so-called science of phrenology, do *not* lack admirers, nor are their votaries denied a respectful meed of praise. Contempt, or at least neglect, is the botanist's sole reward. His revelations are not novel and astounding, like those of the geologist and astronomer, which shake the faith of some in the book of Genesis, and in the history of the wars of Joshua, and in that of the reign of King Ahaz, when the sun travelled in a direction contrary to his usual course.

The modern philosopher, like the ancient, says, in reference to the science of vegetation, *Cui bono?*

It is very much to be wished that modern botanists would condescend to tell simple but earnest inquirers something more instructive about plants than their names and place in a botanical system; and that, instead of wrangling about their affinities and relationships, their nativities and their specific origin, they would say more about their utilities in their application to the common wants of mankind, their immense importance in the decorative arts of design, whether plastic or pictorial, their influence on the taste, the judgment, and the imagination of those who observe them, their humanizing tendencies, their adaptation for conveying religious instruction, etc. "Consider the lilies how they grow."

But over, though not above, these important considerations on the multifarious uses of plants, they supply their possessors with an easy way of gratifying other collectors at very little cost to the donor himself. The finder of a rare plant has as much pleasure in the gratification it will afford his friends as he has in placing it in his own herbarium.

The above considerations are advanced to justify a pursuit; and honesty will not permit us to apologize for it, even though it be misunderstood or unappreciated by the bulk of mankind, and by some it is disparaged as the sheerest folly. If botanists will be true to themselves, and stand by their order, they can dispense with the popular applause so liberally bestowed on amateur students of other sciences; and, if their labours be of real practical advantage to society, they will ultimately succeed in attracting the approbation of those who are best qualified to pass a correct judgment on the value of their operations.

They must make their own way, as Shakspere expresses this

thought, by the force of their own merit, "a gift which Heaven gives, which buys a place next to the king."

KENTISH BOTANY.

A Chapter on the Botany of Thanet.—No. II.

One of the chief objects of our visit was to trace the upper stream, the 'Wantsume,' or northern fork of the Stour as some might call it, in order to observe the site of the ancient channel, and to see whether or not any vestiges of an ancient sea-beach were still discernible.

At a very remote period the River Stour flowed into the sea or strait, which then was between the island and the mainland, and it neither joined the sea at Pegwell Bay, near Sandwich, nor at Reculver, on the estuary of the Thames. Since these times, this channel or strait has been so completely filled up by sudden convulsions and by the gradual accumulation of alluvial deposits, not unaided by artificial means, that where ships once sailed there are now rich meadow-lands, grazed by thousands of cattle, horses, and sheep. The flat marsh extending from Pegwell Bay to Herne Bay still bears the traces of its ancient condition, to which it would probably return in the course of a very few centuries were it not well protected from inundations by strong barriers, which resist the force of the tides and waves.

We investigated first the southern branch of the Stour, viz. that which is alleged to separate itself from the main stream at Grove Ferry and to flow south into Pegwell Bay. Some days subsequently we surveyed the northern branch, that which is said to flow into the estuary of the Thames at Reculver. Formerly, that is before the period of authentic history, this north-eastern part of Kent was separated from the kingdom of Kent by the sea, or the sea flowed round it both on the western side as well as on the north, the east, and the south sides. Bede, in his 'Ecclesiastical History,' gives the following account of this island and strait, as quoted by Leland:—

"There is on the east side of Kent the Isle of Tanet of a

considerable bigness, that is, according to the English way of reckoning, consisting of 600 families, which the River Wantsume divides from the continent, which is about 3 furlongs broad, and passable over only in two places, viz. the *Sarre* and *Sandwich*, and goes into the sea at both its heads."—*Bede, H. E.*, 1-25.

The river now called the Stour discharges *all* its waters into the sea at Pegwell Bay. Of this fact anybody may have ocular proof if he will take the trouble of walking along the bank of the river from Monkton Marshes to Grove Ferry: the distance between Monkton Marshes and Sarre, where the ancient ferry was, is not above a couple of miles. Grove Ferry derived its name from this portage. Here it will be observed, that the river is so securely confined between high banks, river-walls, or bulwarks of earth, that only in excessive floods any water of the Stour can escape, and so flow into the northern marshes between Chislet and St. Nicholas. On the left bank of the Stour there is a hill or rising ground, and, though of small elevation, an effectual barrier to this river on the northern or Reculver side.

But to clear up this point, viz. the non-continuity of the Stour in the direction of Reculver or its non-identity with the Wantsume, we went to Grove Ferry, and from Grove Ferry to Reculver. The whole tract through which both rivers flow is so level, that the Stour might easily be forced to flow either to the south or to the north, or both ways, by the division of its water. This is not the case, for, except in great floods, none of the water in the Stour flows into the marshes at Sarre.

The Wantsume, which joins the sea at Reculver, rises in a rather flat boggy tract of land lying between the eminence on the north side of the Stour and the parish of Chislet, a village on the Canterbury side of the marshes, and between Reculver and Grove Ferry. This insignificant rivulet was described by the Rev. John Lewis one hundred and forty years ago as a river with more mouths than the Nile:—

"The Wantsume is now no continued stream, but dispersed among the lands for the convenience of watering the cattel (cattle) kept on them."—*Rev. John Lewis, 'History and Antiquities of the Isle of Thanet.* (Second Edition. London. 4to. 1736.)

In the whole course of our walk from Grove Ferry to Reculver—the distance is about five miles—no traces of an ancient

beach were discovered, nor are there any on the surface to be discovered. The main stream of the Wantsume is now confined to a narrow channel by high artificial banks; and the level tract through which it flows is intersected by numerous ditches, which are always nearly brim-full of water, in which many aquatic plants grow most luxuriantly.

Several causes, and some very inadequate, have been assigned for the disappearance of the ancient channel or arm of the sea which encircled this isle and divided it entirely from the mainland. One author assumes that the Wantsume channel failed when the great catastrophe occurred by which a great part of Holland was submerged and the Zuyder Zee formed. This inundation so reduced the waters of the sea in its vicinity, that it has not yet recovered its former level. Another gravely asserts, that the disappearance of the ancient forest of Andredsweld* has altered the moistness of the atmosphere; and that, where forty inches of rain fell in a year, there now only fall about twenty-five. It is marvellous, on this theory, that there is still some water in Father Thames, who has been denuded of all his forests! And what will become of the Severn and the Wye when Wyre Forest and Dean Forest have succumbed to the woodman's axe?

We mused on the gradual effects of modern improvements, without great apprehension for the future fate of our rivers, streams, and fountains, till we reached the gap or depression between Reculver, on the Herne side, and St. Nicholas on the Thanet side, of this ancient channel. Here the mystery was cleared up; and we learned, to our great satisfaction, that the felling of ancient woods, and the grubbing up of wide hedges, had no more to do with the drying up of the Wantsume than Tenterden Steeple had to do with the encroachments of the Goodwin Sands—nor so much, if we believe honest Dr. Thomas Fuller. The cause was palpable, viz. a huge dyke a mile long, nearly twenty feet high, and of a proportionate breadth, with strong flood-gates to prevent the ingress of the sea and to permit the egress of the fresh water.

If the sea were allowed free ingress and egress, the former

* This forest anciently extended for above a hundred miles, over the weald of Kent, Sussex, and Surrey. St. Leonard's, Tilgate, Ashdowne forests are the remnants of this wooded wealden tract.

channel might soon be restored to its former magnitude; but it is certain that the owners of the marshes of St. Nicholas, Chislet, Sarre, and Monkton, will do all that money and engineering skill can accomplish to avert so great a calamity.

This walk along the sea-wall explained the cause of the disappearance of the ancient channel.

The marsh plants, or the vegetation of the flats from Pegwell Bay to Reculver may be soon despatched.

Apium graveolens was universally associated with *Œnanthe Lachenalii,* fringing the margins of the dykes, drives, or ditches; and in the ditches themselves grew, *Sium angustifolium, Nuphar lutea, Myriophyllum spicatum* and *M. verticillatum, Utricularia vulgaris, Callitriche* of several forms, *Butomus umbellatus,* very abundant and luxuriant *Sparganium simplex* and *S. ramosum, Potamogetum lucens, P. perfoliatus, P. pectinatus,* and, very sparingly, *P. compressus, Zannichellia palustris, Scirpus lacustris,* the variety *glaucus,* with several *Charas,* of which *C. hispida* was one.

The plants on the meadows appeared to be very few; but *Hordeum pratense* and *H. maritimum* abounded.*

The stragglers as they are called, the awkward squad, were not numerous. The only plants we saw belonging to this ill-favoured class above and beyond those already recorded were *Phalaris canariensis,* on a dung-heap near Minster; and *Hypericum calycinum,* by the roadside near St. Peter's.

This is but a meagre list for so large a portion of Kent as the Isle of Thanet occupies, but it was all that we saw of an interesting character during a week's stay, when every day was fine, and without a shower, or even a cloud, except one, and the

* "In a piece of marsh land near Meregate, called the Brooks, botanists, before it was overflowed by the sea, have observed jagged Sea Orach, English Colewort, prickly Samphire or Sea Parsnip, Besome Plantaine, and in the marshes near the road to Sandwich the round-rooted bastard Cuperus (*Cyperus*), Stone Bramble, or Rasp."—*Lewis, Hist. Tenet.*

In botanical terms, the plants found by botanists in a place now covered by the ocean were, *Atriplex laciniata,* which is still found near Reculver and in Pegwell Bay; *Crambe maritima,* which may grow about Broadstairs, though we did not see it, but it still grows on the Western side of Pegwell Bay, near Kingsdown (see 'Phytologist' v. p. 241); *Echinophora spinosa,* or Sea Parsnip, which once grew on the coast of Kent as well as on that of Lancashire, and which grows on the opposite side of the channel: *Besom plantaine* is *Rose plantain,* a variety of *Plantago major*; *Cuperus* is *Scirpus maritimus,* which is plentiful everywhere in these salt marshes.

temperature about 80° in the shade. We were out either by the seashore, or on the cliffs, or travelling over the fields, or looking into ditches at least twelve out of the fourteen hours that the sun was above the horizon.

A few remarks on the botany of Thanet, and some reflections on the ancient and modern state of the island and of its population, will not be out of place in a botanical journal.

First, if a botanist, totally unacquainted with the natural vegetation of Britain, and ignorant of the prevalent views of botanical writers on native, naturalized, and alien plants, were to begin his study of botany in Thanet, he would be puzzled and mystified by our classifications, both in relation to the origin and distribution of this portion of our spontaneous Flora.

A tyro could not understand on what principle English botanists call *Trifolium pratense* native, and *Medicago sativa* and *Onobrychis sativa* aliens. Until he had learned the history of the modern scientific classification and had studied plants in other parts of England, he could not apprehend the propriety of placing *Lolium perenne* in one class (the native one), and *Bromus arvensis* in another (the alien class). He would see all the above-named plants universally distributed, and all equally well established and abundant both in a wild and in a cultivated state.

Again, it would not be very easy for our assumed tyro to guess the reason why *Papaver hybridum* and *Galeopsis Ladanum*, which grow cheek-by-jowl in the cornfields of Thanet, are placed in different categories, the former in the class of *Colonists*, and the latter in that of *Native agrestals*. It might be a puzzle to him to find, for example, *Diplotaxis muralis* called a *denizen viatical and glareal*, and its constant associate, both here and in north, east, and south Kent, *Mercurialis annua*, classed among genuine *native viatical* plants. In Kent these two plants are inseparable companions.

Cultivation is believed to have a greater effect on the naturalization and dispersion of exotic species than appears to be the case in Thanet. Here every rood of ground is in tillage; there are no woods, no commons, no moors, scarcely so much as a hedge, and very few trees; parks, and extensive lawns and gardens do not exist in this arable corner of England. If tillage were favourable to the production of plants grown from imported seeds, the Isle of Thanet should be the richest botanizing ground in England.

This is not the case, as the list of cornfield or agrarial weeds or plants will show. Many parts of Kent and Surrey, too, exhibit a much richer stubble Flora than this island.

The only newly-introduced plant (we mean into books, not into the country) observed in our brief stay here was *Lepidium Draba*, which had not the slightest appearance of being a recent introduction, for it had probably lived a miserable life on the bare exposed part of the coast, where it was found by us, for hundreds or probably thousands of years.

The extent of the island has been considerably diminished since the period when the Apostle of Britain, St. Augustine, landed here, and published the good tidings of salvation. At that period, viz. in the sixth century (A. D. 597), as we learn from the ecclesiastical history compiled or composed by the Venerable Bede, Thanet contained six hundred families; and according to the computation of its modern historian, the Rev. John Lewis of Margate, who wrote in the beginning of the eighteenth century, it was only half as large as it had been in the seventh century, when Bede wrote. What it gained on the west by the filling up of the ancient channel of the Wantsume it appears to have lost by the constant inroads of the sea on the north and east. Between twenty and thirty miles of coast is exposed to the incessant attacks of the waves, and to the slow process of disintegration by atmospheric influences; the portions thus broken down and carried away have diminished the area of the island to one-half the extent since the earliest recorded historic period.

But if the surface is less, the population is more than tenfold greater than it was when it was the cradle of the Anglo-Saxon race. The towns of Margate and Ramsgate when full, and they are crowded with visitors "when summer days are fine," contain at least 80,000. Broadstairs, Kingsgate, Pegwell, and the ancient villages of Minster, Monkton, Birchington, St. Nicholas, etc., contain at least 10,000 more. During a few months in summer Thanet is swarming with people.

Then the most important places in the island, or close to it, were Richborough and Reculver, both strongly fortified. The former city, or town, is quite deserted; and the latter has, since the removal of the church, dwindled away to a few ruinous cottages, occupied by seafaring folks, whose external appearance is not very much superior to that of their humble habitations.

Since Bede wrote in 710 what a change has taken place in the ecclesiastical condition of Thanet! Minster, the ancient metropolis of Thanet, and still venerable for its antiquities, is certainly the most ancient, but is no longer the most considerable town in the island. Unless the visitor were reminded of its departed greatness, dignity, and glory, he might pass it by as only one of the many interesting villages of England.

The myriads who now resort to this popular watering-place probably have little sympathy with mediæval matters, whether civil or sacred. They come to renovate their physical and mental energies by rest or relaxation, or by taking exercise, and by enjoying fresh air, which is abundant in this isle. But the pleasure of a residence here, whether for one week or two months, would be much enhanced by remembering, or by being reminded, that this island was once a forest, that the ancient Britons issued out of this and other contiguous woods to oppose the Roman forces under their most celebrated leader—that here Hengist first got a footing in England, from the feeble Vortigern, the King of Kent, if not of England (Britain). Hence Thanet is the cradle of the Anglo-Saxon race. The babe was a strong and healthy bantling, and therefore could bear rough rocking.

But whatever we, as practical people, may think of the antiquarian and ethnological character of Thanet, as Christians, as believers in the ever-blessed Gospel, we cannot feel other than warmly attached to a portion of our land, first visited by the zealous missionaries of the Cross, and from which, as from a centre, the light of truth, the knowledge of salvation by Jesus Christ shone into the darkest corners of pagan England, and gladdened many a humble heart. If Canterbury be entitled to the honour of having the first Christian church, Thanet, and probably Minster, may claim the second.

The visitors to Thanet in those days were like white crows, few and far between. Monks and lay-brothers with their picturesque costume have vanished centuries ago. Minster, the capital of the island, and the site of the oldest church in England excepting St. Martin's in Canterbury, has been shorn of its ancient grandeur by the demolition of its wealthy and splendid monastery, and it now offers only its fine church to distinguish it from hundreds of English villages equally picturesque, but none equally famed for traditionary and written monkish legends, smacking

strongly of the credulity and superstition of those primitive times: and none more renowned in the early annals of the sanguinary wars of the Saxons and Danes. The father of our first Danish king burnt down the religious house, scattered the poor nuns and seized on their lands, which were duly restored to the Church when Canute became a good Christian.

Those who wish to study the progress of our country in domestic, social, and political economy will, at a very little expense either of time, or travel, or money, learn it by first visiting the Isle of Thanet and studying on the spot its ancient and modern condition, and then, if they go as we did, to Romney Marsh, where progress appears to have been arrested by natural causes, they will perceive that though light, and knowledge, and curiosity may be increasing, still the outward and visible signs of material progress or improvement do not strike the eye in this the south-eastern nook of England so forcibly as they do in the Isle of Thanet.

JAPANESE BOTANY.

The following "Notes on the Vegetation of Japan," are by Mr. Veitch, of Chelsea, and were originally printed in the 'Gardeners' Chronicle.'

The vegetation of Japan is remarkable for the immense variety of trees and shrubs growing throughout the length and breadth of the land. Three-fourths of these may be said to be evergreens, giving the country almost as fresh an appearance during the winter months as in summer. The country we travelled through during our trip is probably second to no other in point of general vegetation; from the lowest valley to the mountain summits it is one dense mass of luxuriant trees and shrubs. The trees of considerable size which we met with consisted of Pines, Oaks, Maples, etc. Others of less dimensions, viz. Beech, Lime, Alder, Chestnut, etc., give a pleasing variety of foliage. The main roads are planted wherever practicable, with pine avenues. These trees often attain the height of from 150 to 180 feet; their higher branches forming a perfect covered archway. The splendid effect thus produced by miles of noble trees, can scarcely be described. *Cryptomeria japonica* (the Cedar of Japan) must un-

doubtedly be placed as one of the finest trees found in the country. It grows throughout the entire empire, attains a great height and circumference, and in point of beauty is truly admirable. Amongst the many splendid specimens we met with, I noted the following as being the most striking:—1st. On the main road from Ha-tu-jikee to Hakone, an avenue of several miles in length, three trees which I measured in succession were 15 feet, 14½, 13½ feet in circumference at 3 feet from the ground. 2nd On the road from Messima to Atamè I met with three noble specimens, standing singly in the midst of a small village, about 170 feet high, and 16 feet 6 inches in circumference at 3 feet from the ground. Near Atame we passed a forest remarkable for the peculiar straight trunks of the trees. They had grown in close proximity to each other, and consequently had lost the greater portion of their branches. The effect produced was very similar to that of an immense number of ships' masts. Mount Hakone, 7000 feet in elevation, is clothed to the top with dense forests of *Cryptomeria, Thujopsis dolabrata, Thuja pendula* and *orientalis, Retinispora obtusa* and *pisifera*.

The following are some of the most striking trees and shrubs met with during our journey:—*Abies leptolepis, A. firma, A. bifida, A. Tsuga*, on Mount Fusi Yama, many species of Maple growing commonly; *Adiantum, sp. nova* (a new species), Mount Hakone; *Alnus glutinosa* (Alder), the foot of Fusi Yama, and other parts; *Aralia edulis*, near Atame; *A. Sieboldi*, common in all valleys; *Aucuba japonica*, common; *Asplenium fontanum*, slopes of Mount Hakone; and three or four new species. Azaleas; splendid bushes, plentiful in all forests at a low elevation. *Bambusa Metake*, very common in lowland forests; cultivated in gardens. *Benthamia japonica*, Mount Hakone. *Berberis japonica*, seen commonly throughout the journey. *Broussonetia papyrifera*, planted on the roadsides. *Buddlea* sp., grown largely at the foot of Mount Fusi Yama; the Japanese manufacture paper from the bark. *Camellia japonica*, splendid trees, common in all valleys. *Cephalotaxus* sp., resembling *C. Fortuni*, Mount Hakone; another with foliage very pointed and sharp, Mount Fusi Yama. *Castanea vesca*, near Messima.

Chamærops excelsa is seen constantly the whole trip to the foot of Fusi Yama. *Citrus japonica* is common in valleys and gardens. *Clematis*, two or three sp., not seen in flower.

Convolvulus major, many varieties, very common. *Corylus Avellana* (the Hazel), Mount Fusi Yama. *Cycas revoluta*, common in all temple gardens. *Daphne japonica, foliis variegatis*, near Messima. *Deutzia scabra*, common on the sides of hills. *Diervilla*, two or three sp. on Mount Hakone, not seen in flower. *Eriobotrya japonica*, near Omio. *Euonymus japonicus*, a common shrub. *Fagus sylvatica* (Beech), foot of Mount Fusi Yama and Hakone. *Forsythia suspensa*, near Kanagawa. *Funkia*, two variegated varieties at the foot of Mount Hakone. *Hibiscus mutabilis*, single and double, purple and white, common. *Hydrangea japonica, bracteata*, and *hirta*. *Illicium floridanum* and *religiosum*, near Odawara. *Ilex*, sp. unknown, ten to twelve feet high, near Hakone and in the valleys. *Iris* sp., one red, one white, unknown, near Minady; another is planted on the ridge of the thatch of cottages in all villages.

Juniperus sp., thirty to forty feet, unknown; Atame. *Laurus Cinnamomum*, Omio, and most forests. *Lilium callosum*, foot of Hakone. *Magnolia sp.*, Mount Fusi Yama; foliage similar to that of *M. macrophylla*. *Musa paradisiaca*, the Plantain, Muryyana and Messima. *Nerium japonicum*, Muryyana. *Gardenia florida* and *radicans*, common. *Orontium japonicum*, common throughout the woods; a variety, *foliis variegatis*, grown in pots. *Onoclea, sp. nova*, foot of Mount Fusi Yama. *Paulovnia imperialis*, Muryyana, and other parts. *Pernetya, sp. nova*, habit dwarf, nine inches, berries pink, Mount Fusi Yama. *Pinus Massoniana*, common; the avenues are often formed of this Pine: *Pinus parviflora* is common on Mount Hakone and other parts. *Pittosporum Tobira*, a common shrub in lowlands. *Podocarpus macrophyllus*, foot of Mount Hakone, also near Kanagawa. *Poinciana regia*, Odawara. *Quercus cuspidata*, common: *Q. glabra*, between Hara and Messima; sp. unknown, foliage very large, between Hakone and Fusi Yama. *Retinispora obtusa*, thirty to forty feet, common throughout; *R. pisifera*, thirty to forty feet, common throughout. *Rubus*, sp. unknown, foot of Fusi Yama. *Spiræa Thunbergii*, common in most valleys; also a sp. unknown, Mount Fusi Yama. *Smilax*, sp. unknown, a common plant trailing over slopes. *Thea Bohea*, straggling bushes throughout our journey; plantation near Omio. *Thujopsis dolabrata*, forty to fifty feet high, forests on Mount Hakone. *Thuja pendula*, Mount Hakone; *T. orientalis*, foot of Mount Hakone. *Weigela rosea*,

foot of Mount Fusi Yama; another species not seen in flower. *Wisteria sinensis*, rambling throughout the woods. *Woodwardia japonica*, on slopes of Mount Hakone.—*From the 'Gardeners' Chronicle.'*

BOTANICAL NOTES, NOTICES, AND QUERIES.

Botanical Notes for Malvern.

In the 'Phytologist' for September last, the writer of this article observes, that the *Ranunculus Ficaria* (Pilewort or Lesser Celandine) was the "Cuckoo-bud" of Shakspere, noticed in the song ("Love's Labour's lost," Act 5, Scene 2):—

> And Cuckoo-buds of yellow hue
> Do paint the meadows with delight.

I quite agree with this, although I believe that not one of the commentators on Shakspere says so; and I would also observe that this flower, before it expands with the sun's heat, is like a *bud closed*. As I look to the pages of the 'Phytologist' for information, I should feel obliged if the writer of this article would inform me whether the *Ranunculus Ficaria* is called Cuckoo-bud in any book of an early date. The *Orchis mascula* is certainly a vernal flower and truly called *early purple Orchis*. It is, I doubt not, *the flower* Shakspere intended by *Long Purples*, which the young and beautiful Ophelia gathered to add to her fantastic garland; but will the writer kindly tell me if he knows whether the *Orchis mascula* was called *Dead men's fingers* by the cold maids of Warwickshire in the time of Shakspere, or whether it is now so called? As the *Orchis mascula* has not a *palmated root*, how can it be compared to dead men's fingers? I have seen *Lythrum Salicaria* (purple Loose-strife) called Long Purples, and I think it is so called in a Glossary of Northamptonshire; but I cannot believe that Shakspere referred to this, as it is not a flower *of the Spring*. Ophelia also added to her garland *Nettles* and *Daisies*, but the writer of 'Malvern Notes' says, DEAD Nettles. Is this intended for an emendation of Shakspere? As to Ophelia being demented according to the opinion of some, I rather take that of Dr. Johnson, who calls it 'the mournful distraction of Ophelia.' S. B.

Hen-and-Chicken Daisy.

A proliferous variety of the common Daisy, *Bellis perennis*. We are all pretty well acquainted with that curious state of the cultivated garden Daisy, which is known as the Hen and Chicken Daisy. But I confess I was surprised to learn from our valued friend John Jones, the clerk of this parish, that he has met with a similar state of the wild *Bellis perennis* in this immediate neighbourhood. He gathered the specimen, which I have here enclosed for your acceptance, in 1851, in a field called Cae ffynnon, upon the farm Maes Hen Blas. This farm is situated a short distance north of the village; but this remarkable state of the plant has

not come under his notice, either there or elsewhere in the neighbourhood, since the above date. W. P.

Llandderfel, September, 1861.

Hen and Chicken Daisy.

Ex Sibbaldo, in Prodromo Nat. Hist. Scotiæ, p. 2, cap. ii., *Bellis* :— "B. minor, sylvestris, simplex, flore albo, prolifera. Eam inveni in colle prope villam *Welhouse* dictam in vicinia *Tarpichen*."

I have observed the proliferous variety of the common Daisy (Hen and Chicken Daisy) on a hill, near a village or farm called Welhouse, not far from Tarpichen.

Japan Crops.

Rice is the staple cereal of Japan, and of this grain immense quantities are produced. Millet is also grown. *Solanum esculentum* (Egg-plant), sweet Potato, etc., are all extensively cultivated as vegetables. Mr. Veitch states that all Japanese productions, both of fruits and vegetables, are more or less insipid; and he hints that this flavourless state is caused by the excess of manure, which produces rank and tasteless crops.

The fruit, he further remarks, is not only scarce, but bad. The Japanese paying little or no attention to the cultivation of fruit, few varieties are found among them; for example, of Pears, Peaches, and Grapes, only one variety of each is known. The following are met with :— Cherries, Chestnuts, Figs, Grapes, Oranges, Pears, Peaches, Plums, Walnuts. Of Melons there are two or three sorts.

Rare Plants found in Bedfordshire.

Isatis tinctoria: *Woad.*—This plant is cultivated in this country in this manner. They every year sow the seeds and pluck up the old Woad, unless it be saved for seed. It is sown about the beginning of March, and cropped about the middle of May following, as the leaves comes up. It is best in quality in a fair and dry summer, but most in quantity in a moist one. Then they crop it four or five times according as it comes up; the first crop is best, every crop after is worse in order, and the last worst of all. As soon as it is cut it is carried to the Woad-mill, and ground as small as it can be until it becomes fit to ball. When it is balled they lay the balls on hurdles to dry, and when it is perfectly dry they grind them to powder in the mill as small as possible; thus ground, they throw it upon a floor and water it, which they call "couching," and let it smoke and heat, turning it every day until it be perfectly dry and mouldy, which they call "silvering." When it is silvered they weigh it by the hundred, and bag it, putting two hundredweight in a bag, and so send it as fit for sale to the dyers, who try how it will dye, and then set the price accordingly. The best Woad is usually worth £18 per ton. With the tincture of this plant the ancient Britons were wont to dye their bodies, that they might appear more terrible to their enemies. The Romans called this herb "Vitrum," witness Cæsar, Vitruvius, Mela, Pliny, and Marcellus Empyricus; which word being manifestly an interpretation of "Glastum," it appears that Glassa or Glasse signified the same thing among the ancient Britons that it does among us, and not a blue colour,

as Mr. Camden tells us, as it now does among the Welsh. Why the Britons should call this herb "Glasse" I know no better reason than because it resembles some kind of glass in colour, which we know hath often a tincture of blue in it; whence also a dilute blue is called "*color hyalinus.*"—*From Bishop Gibson's 'Camden.'*

Erysimum Alliaria, or Alliaria officinalis.

This plant is brought into gardens in some parts of Wales, cultivated and used in broths, etc. (*testibus* the worthy rector and clerk of our parish); also I have heard of its being boiled and eaten as greens. It is rather remarkable, that here in North Wales this plant is known to the common people by our ordinary English name, "Jack by the Hedge."

W. P.

Llandderfel, September, 1861.

Cape Geraniums.

"I was most gratified on meeting, as with old friends, with several sorts of Geraniums growing in their native state. The horse-shoe and plain-leaved scarlet were quite large shrubs, sometimes six or seven feet high. The dark Oak-leaved kind grew vigorously. The Ivy-leaved variety spread its creeping branches over the adjacent trees, and opened its pink blossoms in great abundance. In other places I noticed several of the finer-leaved *Pelargoniums*, with small and delicately-pencilled flowers."—*From Ellis's 'Tour in Madagascar,'* p. 199.

Cocos nucifera, var. *pygmæa*.

The 'Gardeners' Chronicle' says that "a very great and wholly unexpected event has occurred in the history of English horticulture." The Cocoa-nut Palm has flowered. At Syon, this, the most valuable of all the products of the vegetable world, has expanded its flowers on a specimen of the pigmy breed from the neighbourhood of Galle, in Ceylon. "The trunk of the Palm at Syon is not, we should say, above two feet high, and it is from among the magnificent leaves that form a bright green plume of unrivalled stateliness that the yellow blossoms have sprouted out. It must be highly gratifying to the noble duke in whose celebrated garden this success has been achieved, to find that he alone in Europe is the possessor of so rare a specimen." There are few trees more useful than this. The fruit supplies the Orientals where it grows with both food and drink; the leaves form an excellent thatch for their humble cottages; and the fibres both of the leaves and fruit are made into soft and elastic mattresses, mats, carpets, etc. The coarse fibres make good brooms. The stem, which is about the thickness of the ankle, furnishes fuel.

International Exhibition.

New Zealand Wood for the Exhibition of 1862.—The Maire is another tree the wood of which is of remarkable toughness. It grows pretty extensively in the Northern island. From its extreme hardness, the natives have always used it for making their delving implements. The Maire takes a polish like burnished iron. It is very easily worked in a semi-green state, but when thoroughly dried it is as difficult to work as

iron-wood. It would make excellent bearings for machinery, and would be much less costly while quite as durable as metal. There could not be a better wood in a ship-builder's yard for laying keels and gunwales. It has been used in this country for rowlocks, tool-handles, and for any purpose in which hardness combined with durability is required. The Maire possesses the peculiar quality that, although a nail or trenail might be easily driven into it in a green state, it would be impossible to remove them if allowed to remain until the timber had dried.—*New Zealand* (*London*) *Examiner.*

Ranunculus sceleratus.

Besides the *R. aquatilis* (Linn.), a variety of which has been found about Saharunpore, this is the only species of Crowfoot hitherto discovered in the plains of tropical India. The natives have no name for it, nor do they use it. It is a very acrid plant, when applied fresh quickly producing a blister. It is a native of Bengal, where it appears in shady places during the cold season, a straggler from some temperate countries.—*Roxb. Wight, from 'Useful Plants of India,'* p. 374.

Economical (Superstitious?) Uses of Plants.

"If Mugwort be put into the shoes, a footman may travel forty miles before noon and not be tired."—*Cole's 'Art of Simpling.'*

"Wild Tansy, laid to soak in buttermilk nine days, will make the complexion very fair."—*Ibid.*

Epimedium alpinum.

A correspondent has sent a specimen of the above-named plant with the locality of "Snowdon" annexed, and without the usual voucher of the collector's name. Can any reader verify this station, or is *Epimedium alpinum* known as a plant of North Wales? Omicron.

Herbarium for Exchange.

Having recently had placed in my hands the herbarium of an amateur botanist, consisting of some 800 or 900 species, I shall be glad to exchange with any gentleman having any of our rarer British plants in duplicate. I should be willing to send three or four species of the above collection in exchange for each received, if required. A list of desiderata will be forwarded on application to

Charles C. P. Hobkirk, *Huddersfield.*

Communications have been received from

Fred. Webb; James Backhouse, jun.; S. Beisly; W. Pamplin; John Sim; R. P. Burcham; W. Ashley; Charles Howie; Earl of Ilchester; A. G. More; W. P.; R. Kennedy; C. P. Hobkirk.

RECEIVED FOR REVIEW.

The Brisbane Courier, November 14th.
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